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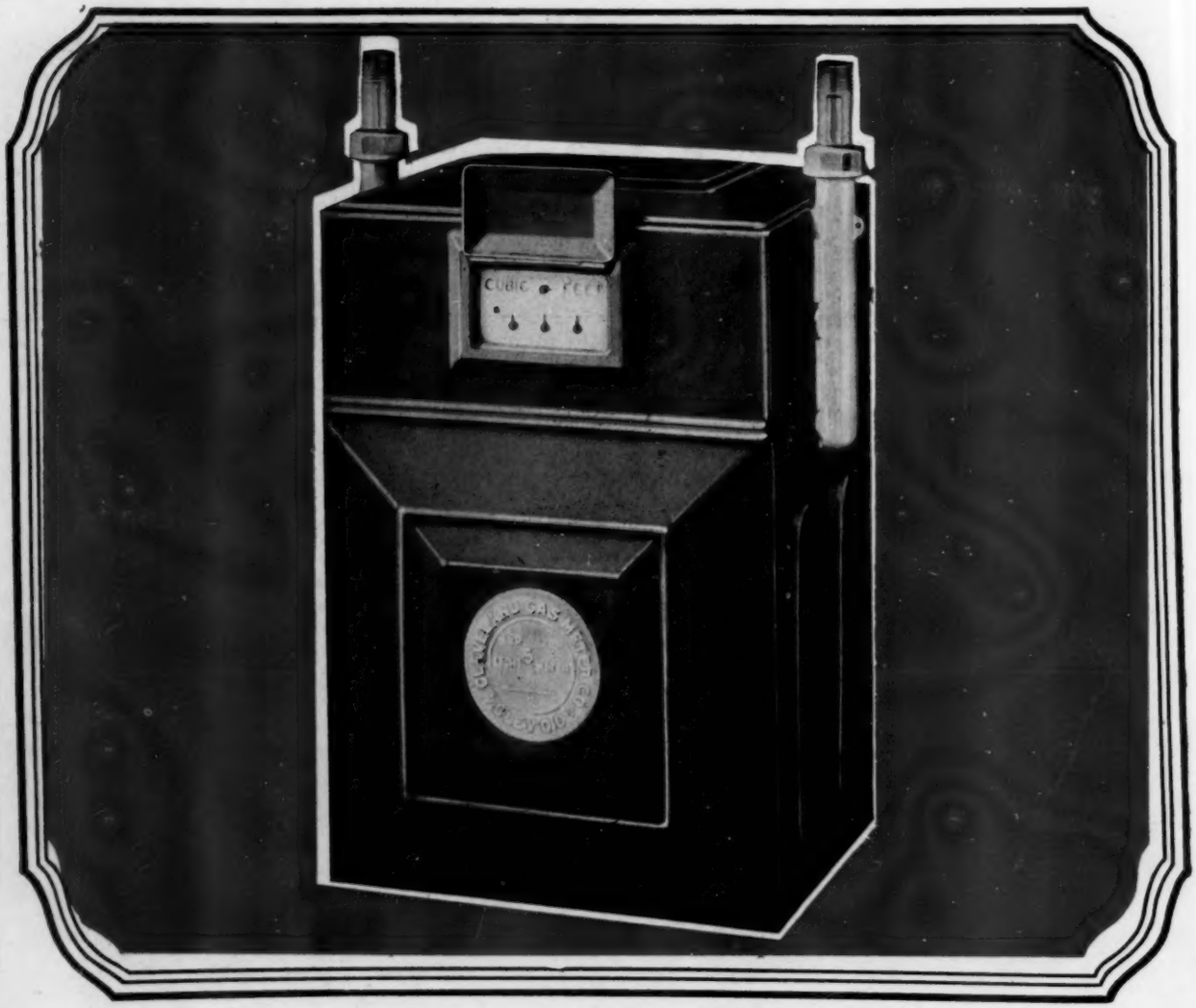

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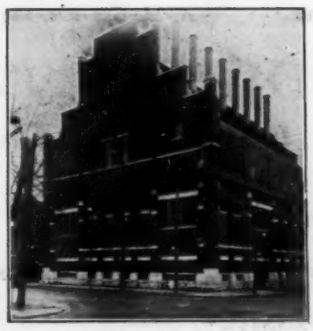

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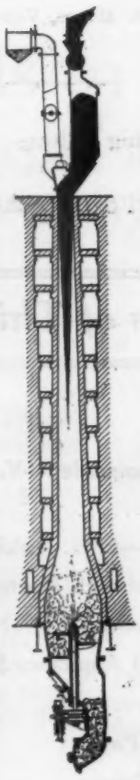

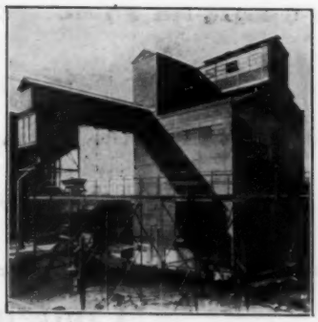

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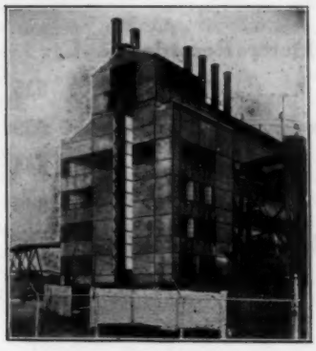

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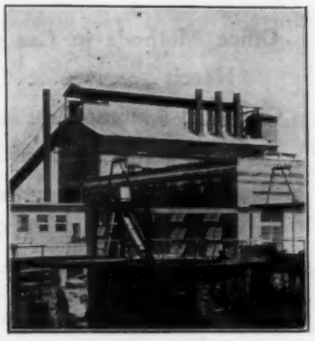

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SIXTY-SEVENTH YEAR

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Office Methods in Gas Companies

V. Meter Records

G. L. Harris

PROBABLY no other instrument used in the gas company has reached such a state of perfection, has become so uniformly reliable, as has the meter which measures gas consumption.

It is absolutely necessary that this be so. Practically the only source of revenue of the gas company is from the sale of gas, the flow of which is measured by the gas meter. Unless the company knows absolutely that these measuring instruments can be depended upon, it is constantly at a disadvantage in dealing with its customers.

But the gas meter of today is reliable. It is right, in far more instances than the proverbial nine times out of ten. And the consumers of gas have learned that the meter is nearly always right. More and more they are willing to accept the meter's statement in preference to their own belief, when they feel that their gas bill must be too high.

Customers Must Know How Meter Works

One of the things that has contributed to this attitude on the part of the consumers is the fact that the gas company openly places such confidence in the accuracy of its meters. But another thing that has helped is the sincere desire of the gas company in many communities to have its customers become familiar with the gas meter, to have them learn how the meter works, to have them learn to read their meters for themselves.

Some companies have introduced instruction in meter reading into the public schools of their communities, by means of interestingly written descriptions of the meter, combined with problems based on meter readings.

We cannot recommend too strongly such co-operation with the public schools. There is no surer way to create confidence in the gas meter than to get the children of the community to carry the message of the meter home from school.

Meter Records Must Be Complete

If meters are to be dependable, they must be tested regularly. And the results of those tests must be available at all times. In fact the Public Utility Commissions in some states require that records of meter tests be kept for a definite number of years. And in some states there must be a complete record of the history of every meter the gas company has ever owned.

But whether this is a state requirement or not, there should be such a meter record in every gas company. There should be a record which shows in detail the history of every meter, whether the meter has been condemned and destroyed, or whether it is in active use. No meter history record should ever be destroyed, and there should be as absolute a balance secured between meters on hand and meters in the records, as is required in accounting for cash.

Meter Records Standardized

Meter records can be more nearly standardized, however, than any other records in the gas company, and the very exactness expected of these records has led to the development of exceptionally good methods of record keeping. We know that the same things happen to meters, the same function is served by meters, and the same data are needed in handling meters, no matter how large or how small the gas company.

The meter records should tell instantly where any meter is, how long it has been there, who is using it (if it is an active meter), where it has been during its history with the company, what tests have been made on it, and what its present condition is.

If your meter records will show these things, you

(Editor's Note: This is the fifth of a series of articles by Mr. Harris. The sixth will appear in an early issue.)

need not fear any regulations which the Public Utility Commission may make.

Other Data From Meter Records

But the meter record should do even more than this, if it is to serve the company to its fullest capacity. From the meter record it should be possible to get periodic reports of meters in service and in stock, to control the physical inventory, and to secure a cross-check against the ledger records of the consumers served by the meters.

All this information, all these possibilities of meter control, should be centralized in one record. In this article we shall discuss the two most modern ways in which meter records are kept, so as to secure these results which we have outlined as essential.

Where Should Meter Records Be Kept

Before considering record-keeping methods in detail, however, we wish to discuss the location of the meter records.

Meter record keeping is basically an accounting problem. Consequently it is becoming more and more generally the practice to place the sole responsibility for the meters on the Auditor of the gas company.

The Service Department and the Shop Department, where meter records are still kept in many companies are becoming generally recognized as workshops, and not as record-keeping offices. Just as general stock control is exercised by the Auditing Department, and physical inventories of stock are balanced against the central books of the Auditing Department, so the meter inventory should balance with the auditing department meter records.

Moreover, the Auditing Department is responsible for consumers' accounts. Every account represents one or more meters in service. And the ledger records of meters should be checked periodically with the meter records. This check is, of course, best controlled by the Auditing Department.

Different Methods of Record Keeping

The different methods of keeping meter records may be condensed into four classes. Two of the methods are manifestly obsolete, and two of them represent modern equipment and modern practice.

We shall first point out the old style methods, and shall then consider in more detail each of the modern methods.

1. The Bound Ledger Method

This method of recording meters, still in use in many places, uses heavy bound ledgers, one page being assigned to each meter. The advantages claimed for the ledger are that no meter record is ever lost, that the ledgers can be locked up at night in a fireproof vault, and that the large sheet allows plenty of space for the complete life history of the meter.

We shall not enumerate the objections of the ledger. They are almost as numerous as were the objections to the old-fashioned ledger for keeping track of Accounts Payable, which has been discarded practically everywhere. Rather, we shall point out the possibilities of the other methods and let the reader draw his own conclusions.

2. The Card File Method

By this we mean the blind card file, as distinguished from the more modern visible file which is discussed below. We shall pass over this method lightly, merely stating that wherever reference to a card file is constant, as is certainly the case with the meter record, the blind card file is cumbersome, slow, and expensive of clerical time. Such card records are everywhere being replaced by visible files.

3. The Tabulating Card Method

Machines are more accurate than people. And tabulating machines, operating punched cards, have been developed to the point where they are almost human. They will count and sort cards with absolute accuracy and with exceptional speed. Consequently, where there is a large number of meters to be accounted for, the tabulating machine method has proved distinctly profitable.

A typical meter record card for use in the tabulating machine is shown here. This card is designed to fit both gas and electric meters. The factory number and the company number of the meter are typed on the card. The date of the installation of the meter at a certain address, and the name and address of the customer who is using the meter, are written on the card. The other information as to kind, make, and size is typed on the card in the proper spaces.

The company number, and the size and kind of the meter are punched in the proper columns. All information except the company number is punched according to a code. For example, the code number for the kind, in the case of a prepay gas meter might be three. And if the meter is a five light meter, the size code might be two. Therefore, the numbers punched in the size column of the card shown should be 02.

Filing the Cards

Of course cards representing meters in stock, cards representing meters which have been condemned, and cards representing meters in active service, must be kept in different filing drawers. As changes are made in the location of a meter, additional entries are made in the date, name and address columns. Of course a copy of every executed service order or meter change order must go to the meter record so that the meter change information can be secured.

At the end of each month these tabulating cards are used to take stock. The stock cards are run through the tabulating machine and checked against corresponding tabulating cards representing the physical count of meters in stock. It is possible to balance the stock of several thousand meters in a

very short time, because the machine count is absolutely dependable.

Making the Count

Each month the cards representing the meters in operation are also counted, and exact figures are secured for making a monthly meter report. At regular intervals also a check of the number of meters in operation can be made against the consumers' ledgers. In making this check, cards are punched showing the number and size of each meter recorded on the ledgers. These cards are run through the tabulating machine in comparison with the regular meter record cards, and a balance is secured. Of course this check is necessary only at infrequent intervals, because the monthly tabulation of the meter cards on the tabulating machine is absolutely accurate; provided the card record is started in balance with the ledger record, this monthly tabulation is sufficient to show the situation as to meters on hand and in operation.

The tabulating card method is fast and accurate. It does not, however, provide for the control of testing, of for removing meters that have remained disconnected over a certain period. A companion record, such as the service record which we discussed in the fourth article of this series, is needed when the tabulating cards are used for the meter records. In the fourth method of record keeping which we shall consider, we shall see that it is possible to combine this information with the regular record keeping information.

4. The Visible Card Method

Practically every gas company assigns a "company number" to each gas meter, immediately on its receipt from the manufacturer. This number is stenciled on the meter, or a metal tag bearing the number is attached to the meter. The latter method of numbering is best, because stenciled figures tend to wear off in time.

Meter numbers should run in absolute sequence and no meter number should ever be used a second time, even though the meter which it represents has been destroyed or sold.

Meter record cards should be filed numerically according to company number. A cross reference to this file is to be found in the consumers' accounts ledgers, and in the street location service record. This last record was discussed in the fourth article of this series.

The Meter Record Card

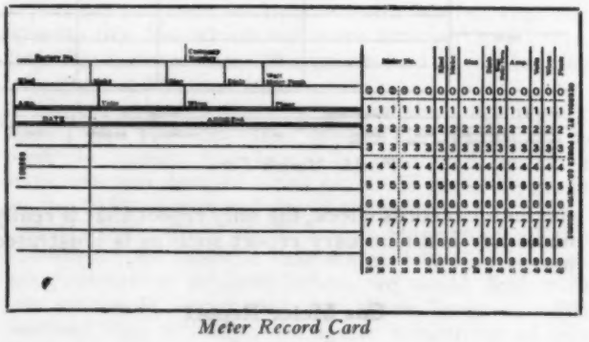
The meter record card shown here is typical of the cards used in keeping records in visible files. It needs little explanation. It is designed for use in a visible pocket file. The record of changes in meter location is shown on the front of each card. The meter data is shown in a separate column at the left of the card, providing a quick check with the data on the meter change notice made out by the Service Department.

Test and repair information is shown on the back of the card. This is so because entries of tests and repairs are far less frequent than entries of changes in location. The test or repair entry is made by removing the meter card from the visible pocket. This use of the back of the card for test or repair information makes it possible to place two meter cards in each pocket, one in the front, the other in the back. Both cards can be signalled with colored signals to denote specific current information.

Visible Margin Information

The visible margin of the card shows the meter number in center. This margin also provides spaces to signal the following information:

1. A meter which has been sold or condemned during the current month.
2. A meter which has been put into active service during the current month.
3. A meter which has been purchased, or has been placed in stock from active service during the month. (Different colored signals are used to show these two cases, but the same signalling space is used, so as to prevent counting twice a meter which is in stock because it has just been purchased.)
4. A meter which has been disconnected during the current month, but has been left on the premises and has not been brought into stock.



Meter Record Card

5. All meters in stock.
6. All meters condemned.
7. All meters on customers' premises disconnected.

Using Signals

Signals referring to the current month remain in position only until the monthly report and physical inventory have been made. After this is done the stock and condemned signals are moved to the right side of the card where they stay permanently in the case of condemned meters; and in the case of stock meters until these meters are again put into service.

It is not necessory to signal active meters, except those which have been put into active service during the current month, and then only until the report of the month's work is made out.

We have noted that signals can also be used for meters disconnected during the current month. If disconnected meters are designated by signals, it is possible to control the removal of disconnected meters in this manner. Most gas companies leave

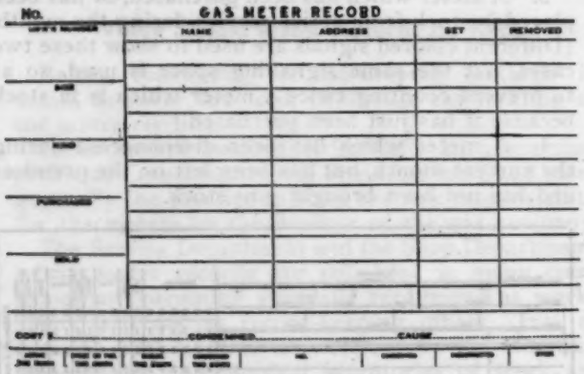
meters on premises, disconnected, for from three to six months. Different colored signals for meters disconnected each month will bring to attention at any time meters which have been disconnected for a given period.

It should be unnecessary for us to add that entries in the meter record should be made equally as promptly as entries in the consumers' accounts records.

Meter Reports

Many gas companies make out voluminous meter reports at the end of each month. Often these reports show the number and the exact status of the meters of every size and kind.

This is no longer considered necessary in the most progressive companies. If the physical inventory and



Visible Margin Card

the meter records check, the only report that is really necessary is a summary report such as is illustrated here.

Gas Meter Report

Summary

	End of Last Month	End of This Month
Last Meter No. Assigned	36612	37112
Meters Active	*34151	34663**
" in Stock	1711	1680
" Condemned	750	769
Totol	36612	37112

This Month

Meters Purchased	500
" Set	872
" Condemned	19
" Placed in Stock from Service	360

* Includes 1260 meters on premises disconnected.

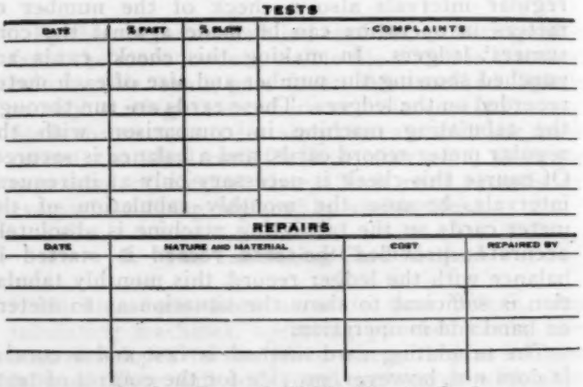
** Includes 1182 meters on premises disconnected.

Compiling the Report

This report contains all of the information that most executives will want. It can be made in a very short time, by counting the signals on the meter cards and performing the necessary addition and subtraction.

For example the number of signals in the spaces "Stock and Purchased this Month" is added to the "Stock" at the end of last month:

Stock at end of last month	1711
Purchased this month	500
To stock this month	360
Total	2571



Another Part of Visible Margin Card

From this is subtracted the number of meters set this month, 872, plus the number of meters condemned, 19.

Total	2571
Set and Condemned	891
Stock at end of this month	1680

Meters Tested Record

If it is desired to include in this report a statement as to the number of meters tested during the month, it is only necessary to place an additional signal on the card of each meter tested. This signal can be removed as soon as the report is made.

The advantage of this type of record is that it does away with the confusion due to stopping all entry work for two or three days at the close of each month while the details of the report are being laboriously dug out of the records. Moreover, it is not necessary to count every meter card, or to inspect every page of a number of large ledgers, in order to get report figures. Only those meters which have actually been affected by the month's work need be looked at in making the meter report.

Conclusion

The investment of the gas company in meters is large. Meters are cash, not only cash expended but potential cash receipts. They should be guarded carefully. If a single meter is lost, the entire company should regard it as a serious matter.

The clerks in charge of the meter records should be thoroughly trained, the record keeping equipment should be the best available, and the supervision of the meter records on the part of the Auditor should be constant and detailed.

There is no excuse for a meter card that is not kept up to the minute, and there is never any possible excuse for a meter record getting out of balance with the physical inventory of meters or with the consumers' ledger records.

Gas in an Automobile Plant*

Description of continuous heat treatment furnaces in the Studebaker plant

C. H. Lekberg

No. Indiana Gas & Electric Co., South Bend, Ind.

THE Studebaker Automobile plant at South Bend has for several years been a comparatively large gas consumer, their monthly consumption ranging between nine and sixteen million cubic feet. They use also considerable quantities of oil, the gas equivalent of which would amount to four or five times the average gas consumption up to a few months ago. From a gas man's standpoint there was room fcr some improvement, and the paramount question in our minds has been how to change to gas some, at least, of the operations being done with oil.

In a plant of this kind and size, operated by competent engineers, it is hard to bring about any radical changes for several reasons. In the first place it is not enough to show that the new scheme will cut operating costs to some extent, the reduction has to be large enough to warrant the capital investment and interruption to production necessary to make the change, and in some cases when existing equipment has not been completely amortized, it has also to absorb this charge. In the second place, no improvement no matter how good can be put into a plant making "Unit Built" cars that does not harmonize completely with the existing layout and course of production; and it is furthermore next to impossible for an outsider to learn enough about the production details and actual operating costs to make an intelligent recommendation, unsolicited.

Preliminary Work

However, we have realized for some time that a progressive concern like Studebaker's was bound to make more or less important changes in plant operation from time to time, inasmuch as in this day and age equipment and methods become obsolete rapidly, and the automobile concerns are amony the most progressive. We also realized that if we were to be in the running when changes involving heating operations were contemplated we must begin laying the foundations immediately. This preliminary work involved several different phases.

It is important to get our customers thinking along the right lines; so that whenever they think of heat they think of gas as the source of this heat. But this is not enough nor can it be accomplished in most cases without working from a different angle? Whenever we talked gas to the Studebaker engineers, they naturally thought of the drilled pipe burners on their ovens or the two-pipe system equipment. We pointed out that engineers had been at work for years on this problem, that these engineers were fully competent, and that the result was automatic proportioning and the one-pipe system using high pressure gas.

Another phase of the preliminary work was the endeavor to have our customers realize what oil actually costs at the burner. We did not achieve this goal entirely but enough work had been done so that the subject was by no means a new one when this matter became imprative.

Besides this, we have spared no efforts to render the best possible service; never in all the years that they have been served by our company have they been out of gas nor had any cause for complaint. Co-operation of this kind from the local management means a great deal to the sales organization.

New Spring and Carbonizing Shops

About a year ago the Studebaker Corporation decided to build a new spring shop and carbonizing department. When we heard of this we felt that the opportunity for which we were waiting had come. But there were many things we had to do besides talk gas for the new furnaces.

We investigated the changes in plant equipment, mains and services that would be necessary to properly handle this load. We analyzed our rate structure and decided what revisions could be made on the basis of this additional business.

But, after taking stock in this manner of all the conditions, we realized that we still had an important problem to analyze before we could deal with our customer about gas for these furnaces. We realized that although we knew something of gas furnaces and gas applications, when it came to a proposition of this kind when the best was required in design and construction, we needed the help of a real furnace manufacturer. We felt the need of tying up with someone if possible, with all of the following characteristics: well established and recognized by industry as a manufacturer of industrial furnaces; with an engineering corps of proven ability in this line of work; good financial standing and most important, one who had a vast experience in designing gas furnaces. There are a number of concerns who have some of these characteristics but we picked the Surface Combustion Company as most nearly meeting all of the requirements.

Now we felt that we were ready to go to our customer.

Cordial But Not Encouraging Reception

Our initial reception was cordial as ever but not very encouraging. It has been a pleasure to me in working with the Studebaker engineers, to note their open mindedness and willingness to listen to any proposition, even though it might sound absurd, pro-

* Presented before the Thursday meeting of the Industrial Gas Section, A. G. A. Convention, Atlantic City, October 14, 1926.

viding it showed any indications of helping them arrive at the proper decision; but when we came and suggested that they use gas for heat treating their springs they were very skeptical as to the possibility of carrying on heating operations with gas on this large scale. They agreed, however, to give careful consideration to what we might offer, so we collected the information and data, necessary in preparing our proposal.

The furnaces wanted were two units, each consisting of a hardening and a drawing furnace complete with automatic temperature control and conveyors, and having a capacity of approximately two complete springs per min. per unit. Later a continuous heating furnace for forming the eyes on the upper leaves was included.

Our proposition came back and was submitted to the customer for their consideration and comparison with the proposals made by other furnace manufacturers. Some interesting sessions ensued. Our proposition specified furnaces 30 feet long. The others ranged from 15 feet to 22 feet long. On the face of it, it looked as if we were completely off the track on our specifications as to the required furnace length. Their Metallurgical Department settled the matter by answering two questions, viz: what was the safe time for heating up this particular material and how long should it soak before quenching.

Discussion on Lengths of Furnace

The speed of the conveyors was determined by the production wanted and the width of the leaves was established. When the length of the furnace was figured to fit these conditions it checked within a few inches of that specified by the Surface Combustion engineers. Another discussion arose from the fact that our design called for only 4½-inch firebrick and then insulation in the walls, whereas most of the others specified 13½-inch firebrick and then insulation. On thorough investigation we found that nothing in the way of strength was required of this wall except to be able to stand by itself, because the weight and thrust of the arch were taken care of by skew back angles and buck staves and as the distance from hearth to spring of the arch was only 12 inches, thickness of 4½ inches would be ample. But of more importance was the fact that we were able to point out that this feature of the design was not for the purpose of cheapening the construction but for that of saving fuel. This may seem paradoxical but the fact is that where a furnace like this is thoroughly insulated, the firebrick affects the radiation losses very little whereas each time the furnace is heated up the firebrick must be heated through before the insulation becomes effective and the furnace comes to equilibrium. As these furnaces were to be heated up each morning, this meant quite a saving besides eliminating the depreciation on twice the amount of firebrick.

There were many other details of design gone over but they all served to create in our customer confidence in the type and design of the furnaces we proposed. I mention these details to bring out the fact that when going after large volume business it is absolutely essential that we come forward with the last word in efficient equipment. Good rate structures and liberal sales policies will avail little if we do not have available equipment so designed and engineered as to utilize to the fullest extent the advantages inherent to our fuel.

The situation was brought to that point where the Studebaker engineers were convinced that gas-fired furnaces offered the possibility of design superior to oil-fired furnaces, when the question was handled by an organization thoroughly familiar with the application of our fuel. The problem now became that of our customer strongly preferring the furnaces we proposed and there remained only the question of justifying their operation on gas at the rates that we had to offer.

Three Fuels Competing

There were three heating agents in the field—electricity, gas and oil. Many times we do not want to concede electricity as a competitor but when we meet it at 1 cent or less per k.w. hr. it is liable to give us cause for serious thought. Electricity, however, was eliminated early in the considerations and the closest competition was between oil and gas.

No definite or complete analysis had at this time been made of auxiliary oil costs and consequently the estimated operating costs on gas appeared to be somewhat higher than those for oil. The result was that although they wanted the furnaces we had recommended they could not justify the additional operating costs on gas. I mentioned at the start that some work had been done towards emphasizing how expensive it really is to burn oil. We felt now that the reason for the unfavorable discrepancy between oil and gas operating costs was due to not charging the proper auxiliary costs against the oil. The superintendent of the Power Division was given the task of determining what these actually were. Previously they had estimated so much per gallon, multiplied this figure by the number of gallons used per year and got a large sum which looked more than ample to pay for the few little extras that go with oil burning. The actual figures were three times this estimate.

Revising the operating costs on this new basis the tables were turned and lower overall operating costs were indicated on gas-fired furnaces, which justified their selection of our furnaces.

So much for the spring furnaces for the present.

The Carbonizing Furnaces

The carbonizing furnaces were a separate consideration and were not taken up until after the spring furnaces were disposed of.

In comparing the different furnace propositions some very interesting engineering questions came up of which I want to mention a few. The original information given out by Studebakers contained only the daily production of all the parts to be carbonized and the heating cycle necessary to produce the case required for each, together with size and weights of

containers and amount of carbonizing compound. It was left entirely with the furnace people to make their own recommendations as to number and kind of furnaces, etc.

The counter-flow type which was finally determined upon found favor early in the considerations.

Contrary to the situation on the spring furnaces, the Surface Combustion Company recommended counter-flow furnaces considerably shorter than any of the others and while the latter proposed running adjacent rows of boxes in opposite directions, the former divided their furnaces into longitudinal chambers, all the boxes in one chamber traveling in the same direction. Where adjacent rows of boxes travel in opposite directions, the fuel input must be practically constant throughout the length of the heating chamber; in other words, it is impossible to speed the heating up of the incoming work because if this is done the outgoing work next to it will be overheated.

Separate Furnace More Advantageous

However, with the Surface Combustion design there is practically a separate furnace for each direction of travel which makes it possible to control heating up and soaking cycles separately, thereby cutting down time of the work in the furnace and the required furnace length considerably. By means of common heat interchange chambers at each end the compensating feature is retained. This system is also by far the more flexible.

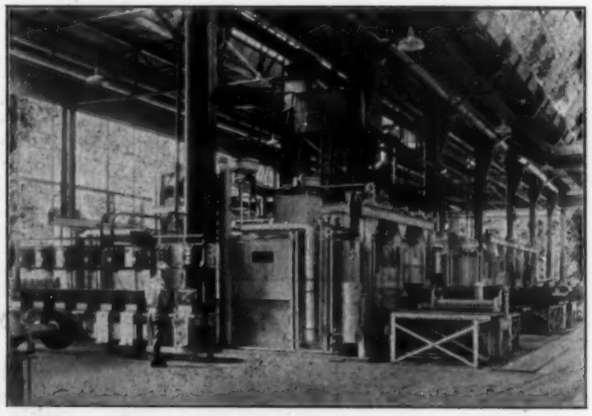
Our proposition also called for recuperators for reclaiming heat from the products of combustion passing out through the flues. We specified furthermore that the counterflow principle entailed a useless increase in furnace cost unless it went hand in hand with recuperation of the heat in the waste gases. This flat statement seemed rather startling until a careful analysis by our furnace engineers revealed that there was considerably more heat being carried from the working section of the furnace in waste gases than in the outgoing boxes. It was pointed out that this condition exists in furnaces where a very long holding or soaking period is necessary. The amount of fuel required to maintain furnace temperatures over these long periods is much more than that necessary to bring the work to temperature. It becomes obvious then that if recuperators are not used for the waste gases it would be better to abandon counterflow and pass the outgoing gases over the incoming work. In this way we would lose the heat in the outgoing boxes but save the greater amount of heat in the outgoing gases. It is evident that outgoing gases cannot be passed over the incoming work in the counterflow furnaces and effect economy because in that section we are transferring heat from the outgoing to the incoming work and the presence of hot gases would merely retard this heat transfer.

As in the spring furnace considerations, the superiority of the designs we proposed brought the question to that of comparative cost of gas and oil. As this operation offered nearly a 100 per cent load factor our rate was more favorable than we could offer on the spring furnaces and this job went naturally to the ideal fuel.

Description

We will start in the south end of the new building 1,000 feet long which houses the new spring making and carbonizing plant. Here we have the spring shop and we will describe the furnaces in order of production.

First then is the eye bender forge where the eyes are formed in each end of the longest or upper leaf of each spring. There are really two furnaces of the open slot type sometimes called rod end furnaces but differing from the usual hand feed type in that the slots extend through the end walls. The furnaces are parallel with the slots, which are horizontal, facing each other; one is stationary and the other located on rails so that it can be moved toward or from the stationary one to take care of different lengths of leaves. Two conveyor chains, one in front of the slot on each furnace carry the ends of the leaves through the slots.



Carbonizing Furnaces in Studebaker Co. Complete Installation Represents 1,000,000 Cubic Feet of Gas Per Day

The slots are about 6 feet above the floor so that the conveyors travel up an incline at the inlet end making it convenient to load. At the outlet end the conveyors go over sprockets so located that the heated leaves are started down an inclined plate, which delivers them to the bending machines. The burner equipment is what is known as the impact type, the flame being directed downward and impinging on a bed of broken refractory which is under the work to be heated. These as well as the other new furnaces use high pressure gas. At the eye bender these leaves are placed in baskets on a continuous overhead conveyor which already contains the other leaves necessary to make up a complete spring, and are carried to the inlet end of the hardening furnaces.

The Hardening Furnaces

The hardening furnaces are overfired, continuous conveyor type and automatically controlled. The hearth dimensions are 6 feet wide by 30 feet long. They are the solid hearth construction and the spring of the arch is 12 inches above the hearth. The hearth is built upon two arches running the length of the furnaces near the floor, which provides an enclosed return for the conveyors. There are three distinct zones in the furnaces. The first one at the inlet end is the preheating zone. Here the flues are located so that the hot products of combustion pass over the incoming material before leaving the furnace. They are built into the side walls and take the gases off just above the hearth level. Next is the heating zone where the large burners are located, all being connected to one manifold and automatic heat control. Finally comes the soaking zone equipped with smaller burners also under automatic control. This arrangement makes the furnaces automatic for all conditions of loading. The working opening at the inlet end extends across the width of the furnaces, while at the outlet end small openings are provided through the side walls, one on each side through which the operator reaches in and pulls out the heated leaves. The conveyors consist of eight Q alloy chains per furnace of the Link Belt Company boltless construction. They slide in channel rails of the same material spaced to accommodate the great variety in lengths of the spring leaves. They run over sprockets at each end of the furnaces and return through the archways below. The sprockets are outside the furnace proper but are enclosed in an insulated casing at each end, the purpose being to retain as much heat as possible in the chain. At the outlet end they are keyed to the drive shaft, and at the inlet end arranged on a counterweighted takeup mechanism. The burners are all of the standard Surface Combustion high pressure tunnel type and fire across the arch. They are located on both sides and staggered.

The automatic controls are Leeds & Northrup throughout; an automatic controller on each heating zone and a controlling recorder on each soaking zone. Regulation is effected by means of Geissinger control valves.

Handling the Spring Leaves

The spring leaves are laid flat on the conveyors in sets, each set making a complete spring, and in two rows, front springs in one row and rear springs in the other; and the leaves so placed that the long ones on one side are opposite the small ones on the other side. In this way very nearly the entire hearth is covered with material. Each furnace feeds two cambering machines, one forming front springs and the other the rear springs. Each position of the revolving drum is for a different leaf of the set, and a complete revolution makes a complete spring. The operator pulls the hot leaves which are placed in the furnace in proper rotation, out through the side opening at the outlet end of the furnace, one at the time, places them in position on the drum and presses a foot treadle. The machine clamps each leaf in position and makes a partial revolution bringing the clamps for the next leaf in position and immersing the first one in the quenching medium. The leaf is held clamped until it has moved around to the opposite side of the drum where it is ejected on to a conveyor carrying it to the drawing furnace.

The drawing furnaces, operating at 900 degrees F. are of the same size as the hardening furnaces and very similar in construction differing essentially in type of conveyor and method of firing. Since the leaves now have their shape they must be placed on edge in loading these furnaces, necessitating a flight conveyor, which is one so constructed as to form practically a moving hearth. In order to assure even heating across the hearth these furnaces are underfired, that is the hearth is of the false bottom type and the firing is done between the two bottoms. The outlet opening is the same as that at the inlet extending across the entire width and the leaves are carried out of the furnace and drop off the conveyor as it passes around the drive sprockets, into a water tank

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STEEL HEAT-TREATING FURNACE
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The Brooklyn Union Gas Company

An Effective Industrial Gas Ad. There Are No Traffic Delays in Getting Gas Into the Plant Served By This Fuel

in order to cool them for immediate handling. They are carried from there on a conveyor to the Brinell Machines and final assembly tables.

It might not be amiss to briefly describe the high pressure metering installation while we are in this part of the building where it is located. It consists of a 6-inch Reynolds governor with auxiliary bowl and a 10-inch by 15-inch Connersville rotary displacement meter equipped with Bristol Strip Chart which records pressure, volume and time. Both are connected up with individual by-passes.

The Carbonizing Furneces

At the other end of the building are the three carbonizing furnaces. These are automatically controlled, continuous, compensating and recuperative. The function of these furnaces is to heat up boxes containing mild steel parts and carbonizing material to a temperature of about 1700 degrees and holding at this temperature until the carbon has penetrated the surface of the steel making it possible to obtain a glass hard surface or case and soft core by subsequent quenching. Two of them are identical except for a slight difference in the pusher equipment. These furnaces handle all the miscellaneous parts and ring gears, the depth of the case varying from 1/32-inch to 1/16-inch depending on the nature of the parts. The overall dimensions are 32 feet in length by 13 feet in width. The third furnace which handles only cam shafts whose case is 3/32-inch deep, is the same width as the others but only 28 feet long. This is due to the fact that the length is a function of the heating cycle, the length of boxes, and the production, and while the length of the boxes is practically the same in all cases and the cycle is longer for the cam shafts on account of the deeper case, the production is so much less as to overcome the increased cycle and necessitate a shorter furnace. The construction of all three furnaces is practically the same. The furnace proper is made in two separate and distinct chambers with a solid firebrick wall extending the whole length of the furnace proper, separating them from each other. All the work in the same chamber moves in the same direction but that in one chamber moves opposite to that in the adjacent chamber. The boxes for miscellaneous parts and ring gears are practically square and each chamber accommodates two rows. The cam shaft boxes are about the same width but twice the length. But since they move through the furnace in the transverse position, that is the short dimension in the direction of travel, only one row is accommodated per chamber. At each end of the furnaces is a heat exchange chamber extending across the entire width and without a separating wall. These are long enough to accommodate three boxes in each row on the cam shaft furnace and five boxes on the other two furnaces. The outgoing work has about 6 hours in which to give up its heat to the incoming work.

Operating Equipment

In moving through the furnace the boxes slide on cast iron and alloy skid rails not in a smooth continuous movement but by intermittent pushers which are timed to give the depth of case desired. All the work in one row of course gets the same treatment. Hydraulic power is used to move the work through the furnaces. The equipment operates as follows:

Two Worthington Pumps, one of which is a standby unit, furnish the pressure. There is a hydraulic cylinder at the inlet end of each row and one to operate each inlet door. A four way valve operates the doors and is connected in ahead of the three way valve operating the pusher cylinders in such a way that pressure is not released to the latter until the former is opened. This is to guard against the possibility of ramming a box against a closed door. The cam shaft furnace and one of the miscellaneous parts furnaces have one set of control valves each so that both inlet doors open at the same time and all the rows of boxes are moved at the same time. However, individual rows can be moved by closing the shut-off valves on the cylinders not wanted to function. The other furnace has two sets of pusher controls, one for each chamber, making a more flexible unit. The outlet doors are left open, the opening being quite effectively closed by the outgoing boxes which stand in the doorway.

The Burners

The burner application on these furnaces differs very materially from that on the spring furnaces. Each chamber is the same as the others and is virtually a furnace in itself, divided into two zones, the heating zone at the inlet end, the soaking zone at the outlet end, the former being much the shorter. Firing is done entirely under the hearth and from the ends. Since these are recuperative furnaces it was impossible to put on the ordinary high pressure inspirators drawing air from the surrounding atmosphere. Instead high pressure gas is delivered to two burner castings extending through the end walls and protruding inside a short distance. At the inside end of each is an orifice. A short distance from there is a wall extending up to the hearth containing directly in front of each orifice a refractory inspirator throat and tunnel combined, giving the true Surface Combustion high pressure inspirator. The space between these two walls contains the preheated air which must be maintained at atmospheric pressure. This is accomplished by means of a small fan for each furnace which overcomes the friction in the recuperators and the piping and atmospheric pressure is maintained by means of an atmospheric governor connected to this preheated air compartment which actuates a throttling valve in the delivery line to the recuperators.

The recuperators are located at the inlet end for the heating zone and at the outlet end for the soaking zone. Each zone is a unit by itself so far as the heating is concerned, having its own recuperator and automatic temperature control which consists of L. & N. Controlling Recorder with Geissinger valve.

Summary

The results from these changes in the heat treating process are saving in labor, saving in fuel, increased production and most important the improvement in quality and uniformity of the product. I can say on authority of the superintendent in charge of the spring shop that the heat treatment of their springs is now nearly 100 per cent perfect as it is physically possible to make it. There is a constant check by Brinell Machines on the material coming through these furnaces and it is not unusual to run for days without the rejection of a single spring leaf.

After a cycle operation has been established on the carbonizing furnaces, production can be carried on with assurance of absolutely uniform product, both in pieces from different parts of the same box and in pieces from different boxes. This is possible without any particular skill or attention necessary from the furnace operators.

In conclusion I would say that we have gained a customer who realizes the full value of our fuel and who is satisfied that they have the most efficient heat treating equipment available today. More materially, we have added to our load approximately eighteen million cubic feet per month.

Selling Fuel in Summer

Company makes record in 1926

John H. Hartog

Portland Gas & Coke Co.

SO many fuel dealers in other parts of the country wonder at what the Portland Gas & Coke Company does each summer to sell its briquets, that the readers of the American Gas Journal may be interested in seeing the crew which accomplished the desired results during the summer of 1926.

As will be noticed, a blackboard shows the daily results of each man and his standing. Generally a contest with prizes was offered in addition to the commissions on sales. The third man standing, counting from the left, is R. W. Coblentz, the division head who had immediate charge of the crew. The first man sitting, counting from the left, who bears such a striking resemblance to Abraham Lincoln, proved to be one of the leaders in the contest, while the unusually attractive little lady was the one who notified the customers, thanking them for their orders, so that they would have a chance to check up on details of the deal to see that they tallied with what the salesmen had told them and to make sure that they had purchased their fuel for the coming fall and winter, to be delivered at the company's option during the summer months.

System Started in 1922

This system of trying to sell fuel during the summer months started in 1922 and has become such an important factor in the company's business that this year over 37,000 tons were sold in that way. This is the largest on record as the two previous years the sales amounted to 25,000 and 29,000 tons respectively.

The inducement to the buyer is a discount of one dollar a ton and the advantage to the gas company is obvious to gas men, namely the more even distribution of fuel throughout the year, thus keeping the equipment from laying idle during the summer and enabling the company to keep its trained men throughout the year. The most interesting point, however, is that formerly there was such a wild scramble at the first advent of frost that it was absolutely impossible to take care of the people clamoring for briquets. This annual scramble is a nightmare of the past, that is now a mere memory. On account of the unusually mild 1925-26 winter, with flowers blooming all along, the fuel bins were only partly emptied, which made the sales this summer the most difficult in 5 years.

The Force That Did the Work

BABY'S HEALTH AND HOT WATER

"NEXT to proper diet, cleanliness plays the most important part in the care of children. Every child should be given a warm bath once a day and on very hot days, two baths, one in the morning and one at mid-afternoon. When the mother takes charge of the baby, she will find it convenient to bathe the baby before the mid-morning feeding. Where the mother is very busy she may find it more convenient to bathe the baby at night just before bedtime. However, the baby should be bathed every day at the same hour, for regularity is the secret of success in raising healthy, happy babies.

"Beginning at two week of age the baby may have a tub bath. Beginning with the water at one hundred degrees, the temperature of the bath should be lowered from month to month until the bath is being given at 85 degrees. Use a bath thermometer for testing the temperature of the water. The water should be tested after the baby is undressed and ready for the bath.

"No unnecessary delay should take place, for in cold or cool weather a baby is quickly chilled. The room should be free from draughts. The wash cloths and towels should be very soft and a pure baby soap used for the bath. Very little soap is ever needed for a young baby's bath and her body should be rinsed well after the bath."

This is the way a special lecture starts, as gotten out by the Ruud Mfg. Co., Pittsburgh, Pa. The lecture deals entirely with the bathing of the baby and contains many valuable suggestions and hints for use in emergencies. It gives information which can be of great value to the Home Service worker. The company will furnish copies of the lecture on request.

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"THE GIRL IN WHITE" MAKES HOME SERVICE AN ASSET IN BUILDING GOOD-WILL

MISS Marjorie E. Pidgeon known as "The Girl in White" is director of the Home Service Department of the Brooklyn Borough Gas Company, Coney Island, N. Y.

This department not only educates the consumer to make greater and more efficient use of gas in the home, but also endeavors to be of service to the home-maker in every possible way.

At present Miss Pidgeon is conducting three cooking classes a week. Two of the classes are for women and a class for children is held every Saturday morning. A regular cooking course is given, membership cards are issued and diplomas are awarded to those completing the prescribed course. The attendance at the classes is very large and the women are very enthusiastic. They have a pleasant social time at each meeting, in conjunction with their regular lesson.

Appliance Complaints

In addition to the cooking classes, the Home Service Department takes care of appliance complaints which refer to difficulties in cooking, operation or adjustment of appliances, and all newly installed appliances are inspected for proper adjustment. Special attention is also given to the testing, adjusting and instruction in operating heat regulated ranges.

Home or Club demonstration work is given upon request. Special diets, recipes, party menus and decorations are only a few of the services given to the home-maker.

The Home Service Department has made itself valuable to the community, and the local newspapers give it considerable publicity, such as the News Bulletin and Coney Island Times, Brooklyn Times, Brooklyn Standard Union, Brooklyn Daily Eagle, and the Brooklyn section of the New York Journal. "The Girl in White" also conducts a food column in two local papers.

Miss Pidgeon believes that the home-maker should conduct her home as efficiently as a business and she provides many educational features in her course such as: "How to Read Your Gas Meter," "Manufacture of Gas," "Budget Making." lecturers from food products companies, instructor from the Dennison Company, for the making of party favors and decorations.

The motto of this department is S-E-R-V-I-C-E.

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NEW USES FOR HOME SERVICE AUDITORIUM

THE Home Service Department of various gas companies have been finding new uses for the Home Service Auditorium in addition to the ones which they have generally been put, such as holding lectures, demonstrations, meetings of employees, etc. For example, the Home Service Department of the Peoples Gas Light & Coke Co., of Chicago, Ill., invites various women's clubs and charitable organizations to make use of the auditorium. For example, in one case social societies like the Kiwanis and Rotary Clubs have used it for re-

hearsals of entertainments given under their auspices. In another case a charitable organization held meetings in the auditorium, and after these meetings the women were invited to attend demonstrations of the Home Service Department.

These uses of the auditorium are very commendatory in that they tend strongly towards the fostering of a spirit of good-will and friendliness toward the community.

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TEACHING HOUSEWIVES TO COOK WITH GAS BEFORE IT WAS TURNED ON

THAT the Home Service Bureau of the Tappan Stove Company is on the alert is proved by the fact that they can show housewives that "You Can Do It Better With Gas," even before the gas company makes the use of gas available to their homes.

Knowing that gas was to be given the people in Attica, Ohio, in a short time, they gained the attention of Attica housewives by teaching them the advantages of gas cookery and the superiority of the modern heat controlled gas range before the gas was turned on.

Much curiosity was evidenced by Attica women who did not see how this was to be done when the gas had not yet been turned into the mains—but they found on attending the cooking school that the Tappan range used on the platform had been connected to a Pyrofax Gas outfit. This outfit consisted of a steel cabinet containing the necessary controlling equipment and connections for containers of Pyrofax Gas. The gas was conveyed from the cabinet to the range in just the same manner as city gas.

With this arrangement the women of Attica were given the opportunity to learn all about the use of gas and they are looking forward with considerable pleasure to the time when they can have it in their own homes.

At the same time, the women who came into the school from places beyond the city gas line were shown that "You Can Cook With Gas No Matter Where You Live."

Salesroom Arrangement

How a good display aids in selling appliances

Frank H. Williams

SUPPOSE there are two gas companies which have exactly the same number of people coming to the office every week. One of these gas companies may make a larger number of sales of ranges and appliances all the time to people who visit the office, while the other gas company may make but comparatively few sales to office visitors.

What is the reason for this state of affairs?

Why does the one company make so many sales while the other company makes so comparatively few sales?

There may be local reasons for this state of affairs but it is more likely that the reason lies in the fact that one company displays its ranges and appliances in an attractive, business-building manner, while the other company gives its ranges an exceedingly poor display.

It is evident, then, that the more attractively the gas company displays its ranges and appliances the more its sales will increase.

Details of a Good Display

But just what details apply to a business-building display of these goods?

It is for the purpose of suggesting some answers to this question that this article has been prepared and it is hoped that from this article various gas companies will secure worth while ideas which they can use to good advantage in their own businesses.

Let it be said at the start, then, that in most instances a long room offers a better chance for a business-building display than a short room.

In a long room, such as that of the City Gas Company, of Terre Haute, Indiana, shown in the accompanying picture, the cashier's desk and the office can be located at the rear of the room, thus making it necessary for the folks who pay bills and who have business at the office, to walk all the way through the room to the rear and thus making it possible to display many appliances and ranges to the folks while they walk by. The appliances and ranges are arranged along the sides of the walls.

A Long Room Advantageously Used

Notice this room of the City Gas Company closely. Notice the ranges and heaters on the right side of the room, the appliances on the table in the foreground on the left, the water heaters and ranges on the left toward the rear of the room. What person could walk through this room to the office to pay a gas bill without paying a lot of attention to these goods? And, certainly, many of the women who go through the room to the office are bound to feel a great desire to own one of the ranges so attractively

(Continued on page 548)

As The Journal Views It

HOME SERVICE—DOES IT PAY?

While there were many subjects which engrossed the attention of the commercial men during the meetings of the Commercial Section at Atlantic City, there was perhaps no one matter that interested them so strongly and invoked so much discussion as Home Service. The Committee on Home Service presented a very comprehensive report in which all of the various phases of this work were discussed in detail. There is really no need to describe here either the workings or the results that can be obtained from Home Service.

Nevertheless, it does appear that the real object of Home Service is not always clearly understood. Home Service is of course a very practical undertaking, but then again it must not be forgotten that it has a decidedly spiritual character.

The customer, asking information of the Home Service Department, receives considerate attention and gets what she wants. Those who apply to the Home Service of the gas company for advice or aid are helped in so far as it is possible. These are physical indications of the workings of Home Service which are of unquestionable practical value.

The spiritual side is however of greater importance. Home Service in making the task of the housewife easier and pleasanter, is really a very potent factor in improving home conditions and in generally enhancing the position of the home in modern society. All those, who have studied Home Service carefully and have analyzed its various workings and the results that have been obtained, have clearly seen that the importance of Home Service to any community is far in excess of what appears on the surface. Many a domestic difficulty may well be avoided and smoothed over by the help the housewife may receive from Home Service workers solving her difficult and perplexing domestic problem. It is therefore meet that we of the industry do not judge Home Service in too narrow a light. It is true that the gas company must have some material benefit from all its undertakings; that is necessary to its life. But to try to trace direct material benefits back to Home Service is just as difficult a matter as to define in exact terms the results that are obtained from the window display, from printed advertisements and other efforts of the commercial department to increase sales of gas and gas appliances. It is always a difficult matter to do this, but nevertheless, it is quite generally agreed that such material results do accrue, and at times it is possible to have direct evidence of their existence.

Then again we must not forget the very potent effect that Home Service has had in engendering and maintaining good-will. Home Service workers by their untiring efforts to make things easy for the housewife, to help her solve various domestic problems, even though these may have but little to do with a gas range or any other gas appliance, are active agents in making the citizens of a community look with friendly eyes upon their gas company. Direct evidences of this fact are by no means lacking and Home Service is conceded to be an important good-will builder.

Home Service must be thus considered as a real contribution of the public utilities. It is only in this broad light that it should and must be judged, if its real value is to be understood. It cannot be otherwise, if it actually performs its purpose, defined in this comprehensive manner, it will unquestionably result in material benefit to those who are responsible for it, even though direct evidence of this may not be visible on the surface.

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GAS PROGRESS ON EVEN COURSE

The gas industry is progressing but its progress has been so slow and steady, although today many factors are accelerating it. Charles A. Munroe, chairman of the board, Laclede Gas Light Co., St. Louis, says:

"Meteoric growth is rare in the gas industry, but an even course has been followed for nearly a century. There is nothing now visible that will stop this onward course. On the other hand, there are many things which will tend to accelerate it.

"The increased cost of competing fuels is opening

up enormous sales for industrial and space heating uses. The refrigeration field promises to be as great a consumption factor as the domestic range. To get our full growth we must keep our rates down. If this is to be, taxes must not be materially increased on our existing property. The gas industry ought not to be taxed out of proportion to the taxes paid by industries furnishing fuels with which it competes.

"A constantly increasing revenue will be derived by the government from the gas industry if capital is encouraged to continue flowing into the business in response to the requirements of growth. But should officials elect to increase taxes on present capital, and thereby increase the rates, the growth of the business would be retarded, curtailing the need for new capital which otherwise would be required."

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SALESROOM ARRANGEMENT AND APPLIANCE SALES

(Continued from page 546)

displayed or one of the gas heaters or water heaters or some of the other appliances.

It is seen, then, that the first secret of arranging ranges and appliances so that they will sell to the office visitors, is to place them so that they are forced upon the attention of visitors. "Well displayed is half sold" is just as true of selling ranges as it is of selling women's wear. The ranges and appliances off in a corner where no one ever sees them will never sell as well as the ranges that are right out where everyone who comes into the office must see them.

Emphasizing Attractive Features of the Display

A second factor in giving a business-building arrangement to ranges and appliances is to so place them that the most attractive features of the goods will be forced on the attention of the folks.

The most attractive features of ranges are the fronts of the ranges. The side views and the rear views mean little to the average person. Notice again this view of the City Gas Company's salesroom and see how the ranges are placed on a slant. By having them on this slant the fronts of the ranges are forced on the attention of the people coming into the store. If they had been placed squarely against the walls then the sides of the ranges would have been forced on the attention of the visitors more than the fronts and just that much effectiveness taken away from the display.

Another highly important point in getting a business-building effectiveness into the display of ranges and appliances is accessibility.

A visitor to the gas company's office may become interested in one of the ranges or appliances on display. When this occurs, what is the next reaction of the visitor? That is a desire on the part of the visitors to open the doors of the ranges or finger the appliances. If the visitor cannot do this, then the visitor at once loses a large share of his or her interest in the object. This means, in turn, that the company doesn't make a sale of the object which it might have made if the object had been made more accessible to all the office visitors.

Accessibility Important

This fact is evidenced by the experiences of some gas companies which have had ranges placed on platforms inside the entrances to the offices. The platforms raised the ranges so high that they became inaccessible to the people coming into the office. This in turn meant that in many cases the sales from this sort of a display were very disappointing.

Close inspection of ranges and appliances and more or less handling of the objects are demanded by people who intend to buy or who are really interested in the objects. And the gas company that remembers this point and that governs its appliance and range displays accordingly will profit.

Cleanliness of the Display

Still another detail in making range and appliance displays build business in a satisfactory manner, is

Sales Room, Citizens Gas Co., Terre Haute, Ind.

that of keeping the articles immaculately clean all the time.

Suppose a housewife becomes interested in a gas range. Suppose she goes to the range and opens some of the doors. And suppose that she then looks at her hand and finds that it is dirty. What is her reaction?

It is an immediate dislike for the range. She instinctively feels that it is a dust and dirt catcher and that if she puts it in her home she would always be getting her hands dirty when she used it and would always be forced to spend a lot of time and energy in trying to keep it clean. And, of course, when the housewife got this opinion of the range she would be dead set against it and it would take a world-beater of a salesman to make her buy the stove.

When dirty articles are displayed by the gas com-

(Continued on page 550)

INDUSTRIAL GAS LESSONS

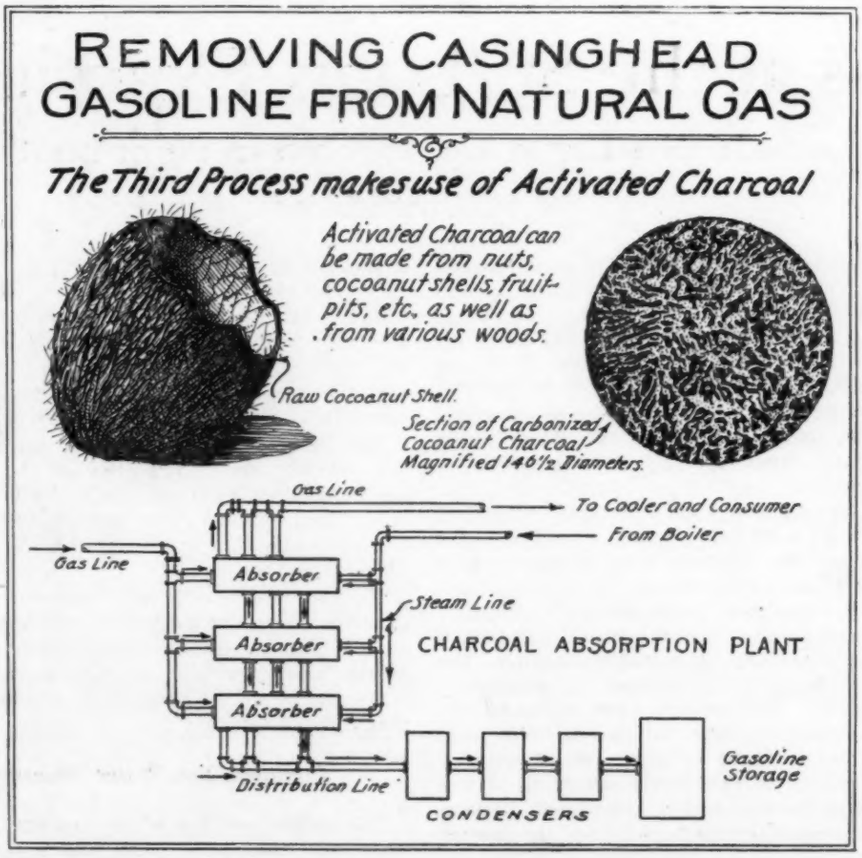
IF IT'S DONE WITH HEAT YOU CAN DO IT BETTER WITH GAS

Lesson No. 141

Combustion

Absorption in Charcoal

A third method of extracting gasoline from natural gas or casing-head gas is to absorb it in charcoal. This process differs very radically from those that have been mentioned above, in that a solid instead of a liquid is used for the absorption. Furthermore, this process is what is known as a batch process, being discontinuous in contradistinction to the other absorption processes, which are continuous. The substance used is "activated charcoal" and is the same kind of charcoal that was employed in gas-masks during the war for protecting soldiers against poisonous gases. Activated charcoal is a very interesting material and also finds certain use in the manufactured gas industry. After the charcoal has absorbed the gasoline from the natural gas, it is necessary to remove the gasoline from the charcoal by treatment with superheated steam.



The plant that is employed for the removal of gasoline from natural gas by absorption in charcoal consists of a number of absorption cylinders of horizontal type, which contain the activated charcoal and through it the casing-head gas is led. When these absorbers have become saturated with gasoline, then steam is passed through them and the gasoline is removed. The plant, of course, contains all the necessary auxiliary apparatus for collecting the gasoline and pumping around the various fluids, piping, etc.

The advantage of the charcoal process over the oil process lies in the fact that the charcoal process will work just as well but the initial cost of the plant is less. Then again, the plant is operated low instead of high pressures, which is always an advantage. Furthermore, there will be at least a 25 per cent greater extraction of gasoline from dry natural gas in case of the charcoal process than in the oil process.

The fourth and last process for removing gasoline from natural gas is an absorption process in which the casing-head gas constituents are directly absorbed in gasoline to give a properly blended mixture.

(Continued from page 548)

pany the concern would, in most cases, be better off if the goods were not on display at all.

Do Not Confuse the Display

Again, it is found by many gas companies that it always helps in selling ranges and appliances to display them without any other articles being on them or displayed with them, except in the cases of special demonstrations. For instance, a range sells better when it is displayed minus pots and pans than when such articles are displayed with it. This is the case because when there is only the range to look at the customer's attention is focused on it; but when there are other articles to look at the customer's attention strays to them and the salesman must repeatedly draw the attention back to the range.

The right arrangement of the ranges and appliances displayed by the gas company in its sales room is bound to build business for the concern.

Gas at the St. Louis Exposition

Laclede Gas Light Co. exhibits in eight booths

W. B. Stoddard

SINCE gas is the modern fuel it was quite natural that it should have played an important part in the St. Louis Exposition, recently held at Forest Park, St. Louis, Mo. The hundreds of exhibits of industries of all kinds, instead of being housed in large buildings, were arranged in booths. These booths, set up in long lines, with avenues between, covered many acres of ground, and with their domed tops of many brilliant hues, presented a picturesque spectacle viewed from any part of the grounds.

Conspicuous among the local industries was that of the Laclede Gas Light Co., which occupied eight large booths, four long and two deep, facing on two different "streets" and all opening into each other, so that visitors could pass from one to another as through different rooms of a house. Each booth was given over to exploiting a single phase of the gas industry. The general scheme of decoration was blue and gold. The awnings were of these two colors, while overhead were billows of blue and gold bunting, and curtains of the same draped at each side. Each booth had the monogram of the company in large letters and at the base of each booth, brief information containing the appliances shown therein.

Gas Ranges Exhibited

Gas ranges were shown in a striking manner, different types being shown in big shadow boxes, like a picture in a frame, draped with yellow bunting. Other booths featured laundry dryers and gas-fired laundry stoves, hot water heaters, gas furnaces, an inviting reception room (where gas appliances met the eye on all hands as one rested in the easy chairs), and a model kitchen, all of the equipment of which was supplied by the gas company.

The laundry dryers were of special interest, and fate worked into the hands of the firm in a very kindly manner, as several days of the exposition were rainy, and enabled their demonstrators to prove to the audience the practical advantage of having an efficient indoor dryer.

Each of the booths was adorned with a painting in warm colors showing some gas appliance being put to efficient use by the housewife. The reception booth was especially attractive, with tiled floor, large statue of St. Louis, and a table holding many pamphlets describing gas appliances.

Complete Hot-Water Heater Exhibit

The exhibit of hot-water heaters was very complete. In the center rear was a painting showing flowing steaming hot water, and just below it a porcelain bathtub, with fixtures. A half dozen water heaters, with tanks, were on exhibition, some of them being open to show the coils. Across the base of the booth was lettered "St Louis Home Owners—

Try It Free Thirty Days" and "No Fuel Like Gas for Water Heating—Ask Us."

The model kitchen was completely outfitted with gas range, incinerator, kitchen cabinet, refrigerator, table with kitchen utensils, and a porcelain sink, with faucets and hot-water connections. Here, too, was a hot-water heater and tank, to show the source of supply. All of this equipment is sold by the Laclede Gas Co., and attention was called to the daily free cooking classes held at their main salesroom and offices, and that recipes for any of the dishes prepared would be furnished free upon request.

One of the Laclede Booths at the St. Louis Exposition

An interesting feature of the reception room was a great panel on which was incribed the names, addresses, and telephone numbers of a large group of St. Louis plumbers and contractors, who co-operate with the firm in the sale and installation of gas fired furnaces for either hot air or water systems of heating.

Another exhibitor of gas appliances was L. J. Cuneo, who in a semicircular booth hung with curtains of red, had an interesting showing of gas ranges and gas fired boilers. On a wicker table were a number of pamphlets regarding the equipment, which was offered for free distribution.

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GAS COMPANY USES AIRPLANE TO EXTEND SERVICE

One of the oldest public utility industries in the United States now employs the latest method of transportation to assist it in making aerial surveys of territory in which extensions to its service lines are to be made.

It is believed that the Louisville Gas and Electric Company, Louisville, Kentucky, is the first utility company to employ an airplane in the making of aerial surveys, to aid its engineers in mapping out extensions for gas mains and electric transmission lines. Experience has shown that the cost of such aerial surveys is approximately the same as by the old method of survey, but the time is reduced to about one-quarter.

The company purchased an airplane at a cost of slightly more than $3,600 and a camera that cost $758. The pilot and photographer when not engaged in making aerial surveys and photographs are employed in the Engineering Department. Photographs are taken both vertically and at an angle—first, for the purpose of making a mosaic map, and second, to show the contour of the land and elevations of buildings, etc.

While primarily the purpose of making these surveys was for the laying out of extensions, a secondary use has been found in advertising and in the sale of photographs to private individuals. Also, aerial photographs have been made for outside interests, one being the map of Camp Zachary Taylor, covering an area of approximately one square mile. These photographs were taken on a Wednesday and the completely finished map was delivered the following Monday.

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GAS OVENS FOR ORE NEW MINE DEVICE

The use of gas to cook ore is a new application of this fuel to industry and its adoption has solved a difficult mining problem, according to engineers.

A rich body of zinc ore was recently uncovered in an Oklahoma mine and was found to have a high content of asphalt oil, which made it difficult and expensive to smelt. Oil-fired kilns did not free the ore of its gummy deposit and it was decided to try gas.

A main was built to the mine by the local utility company and two rotary kilns were equipped with gas burners. Treatment in the gas-fired kilns not only left the ore entirely free of asphalt oil, which was cooked away, but a material increase in the tonnage of ore through the kilns was recorded.

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JAPANESE TO LEARN GAS HOUSE HEATING

The importation of a modern gas-fired house heating furnace into Japan proves that Occidental country is rapidly adopting American methods and ways of living, according to M. Nagai, sales engineer, Toho Gas Company, Toho, Japan. The gas furnace is the latest American-made comfort-giving device.

Mr. Nagai, who recently completed an extensive tour of this country, visiting gas plants and studying the customs and practices of the American gas industry, took back with him a gas house heating boiler. This will be installed on the sales floor of his company, set up complete and operated for the edification of the Japanese.

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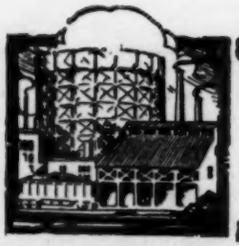
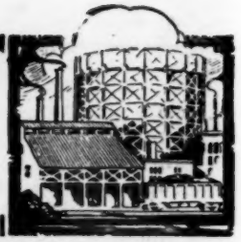
GAS HELPS FINISH PAPER

The installation of gas-fired dryers in the manufacture of paper has resulted in a lower cost of finishing, as well as increased production. When paper is "finished" to give it a lustre a thin coat of varnish is applied, which was formerly dried by steam. Drying the varnish by radiation of gas-heat has been found to produce a more uniform result.



NEWS OF THE GAS INDUSTRY



George B. Cortelyou Addresses Broadway Association

New York City.—That the Consolidated Gas Co. is alive to its responsibilities to the public and is ready to meet them in the aim to make its services of benefit to the public, was the declaration of George B. Cortelyou, president of the company, in addressing the Broadway Association at a luncheon-meeting at the Hotel Astor. It was the fourth of a series of meetings on public utilities.

Mr. Cortelyou reviewed the growth of the gas industry as the oldest of public utilities that dates back to 1823 when a charter was granted to a gas company in this city.

A motion picture was shown illustrating the public services rendered by the gas company.

There were more than four hundred members present at the meeting which was enlivened by music and solo-singing.

Acting President L. L. Strauss told of the plans of the association to celebrate next month the 300th anniversary of the founding of Broadway as a public thoroughfare.

Distinction in Service

Mr. Cortelyou, in discussing the responsibilities of public service corporations, said that there is a distinction of utility service that is often overlooked.

"Unlike other industries, our utilities must accept all business that is offered," said Mr. Cortelyou. "They cannot choose their customers, they cannot place any limit upon the demand for their product, but must supply that demand without notice. Having started they cannot stop. They cannot close down for repairs or for any other cause. The fire, once lighted, must never go out. The slogan, 'Ready to Serve,' must be kept forever true in its literal sense. They must not only be prepared to meet today's needs, but must provide a reserve against tomorrow's. They must cultivate the good will of their public, first by deserving it through good service and then by advertising the fact.

"It is therefore no idle or casual interest that we claim in Father Knickerboker's family. We have extended our mains and services where they were needed, but meanwhile we have been so close to the more technical phases of our work that we have sometimes failed to notice the extraordinary social revolution of which we have been, in part, the cause—which, indeed, has made this modern Broadway possible.

Much Remains to be Done

"Much has been done. Much remains to do. In many lines of both gas and electric services we have barely started developments quite as revolutionary in their way as those which I have mentioned. In fact, there never will come a time when we can point to our work and say—'it is finished.' There never should come such a time, for when we cease to progress the civilization which we have builded with so much toil and pain will reach an inglorious end.

"One of the greatest undertakings we have before us is the ushering in of that day when smoke, with its accompanying evils of dirt and disease, shall be as unnecessary and as little tolerated as the open sewage systems of earlier days.

"We refused to compromise with darkness and drudgery, and we still refuse to compromise with smoke and dirt which pollute the very air we breathe and deface the buildings and properties we erect.

"By extending the services of electricity for power and of gas for heat, the days of the smoke nuisance are numbered, and our greater city is being restored, year by year, to its rightful heritage of health and sunshine."

Public Service Company of Colorado Completes Franchise

Gas Rates Based on "Use of Demand"

Denver, Colo.—The Public Service Company of Colorado has completed its proposed franchise stipulations and representatives of the company are meeting with city officials, for the purpose of making subtractions or additions, agreeable to both sides and then the whole to be submitted to the voters for approval. If the proposition receives the voters' approval it is the law.

Initial Proviso

The assessment of $50,000 per annum, a franchise tax which the old franchise stipulated is to be obliterated, the saving to the company to accrue to the consumers of gas and electricity, by a sliding scale.

The sliding scale for the electricity rate is based upon the "Wright demand room basis." The gas rate is gased upon the "use of demand," explained as follows:

Use of Demand Rate

The new gas rate for residence service under the proposed ordinance is 95 cents per 1,000 cubic feet for the first twenty-four hours' use of the demand per month; 45 cents per 1,000 cubic feet for the next forty hours use of demand, and 35 cents per 1,000 cubic feet for all additional gas used per month, with a net monthly minimum bill of 90 cents per meter. The company, under the old franchise, makes a straight net charge of 95 cents per 1,000 cubic feet used per month.

The words "use of demand" mean the maximum consumption of gas which the customer might require at any one time, measured on an hourly basis in cubic feet.

For example: the demand for a top burner on an ordinary gas range is about twenty cubic feet per hour. For an ordinary tank water heater, the demand would be about seventy-five cubic feet per hour.

If the total demands of burners which a consumer would desire to use at one time is 200 cubic feet per hour, that figure would constitute the demand. Twenty hours use of the demand would be twenty times 200, or a total of 4,000 cubic feet. The customer would pay 95 cents per 1,000 cubic feet for the first 4,000 cubic feet used in one month, with lower rates on all additional gas burned.

A consumer's "demand," it is pointed out by the company, is not the total demand of all burners installed in his home, but the total of all burners which may be used at one time.

Quality of Gas

Gas with not less than 400 B. T. U. shall be the kind furnished, a stipulated penalty of $200 for each B. T. U. that the actual average heating value in any month is below the standard. To be sure that such shall prevail the city is to appoint a qualified testing engineer; said engineer to be permitted without question to make tests whenever and wherever he sees fit.

Natural Gas

The company will make every effort to give Denver natural gas, but of course the uncertainty of the visible supply and the large cost for bringing it into the city must always stand as a "Drive Slow" sign, and it is also stated that unless the source is assured, it is impracticable to name a price for natural gas. The nearer to the city the less the cost is the idea, however.

The Difference

It is plainly stated that the difference in cost to the consumers means a saving to the customers of $350,000 per annum, and it is for the purpose of permitting all to understand the arithmetic of the whole that it has been given to the city fathers to exploit the contents so that there may be no "cat in the bag" cry after a while.

There is practically no change in the commercial and industrial gas rates as are now in effect.

$30,000,000 Utility Financing in View

Utilities Power and Light Co. in Control of Indianapolis Light and Heat

New York City.—A successful effort of the Utilities Power and Light Company to win control of an important public utility in Indianapolis, Ind., from Samuel Insull has culminated in the offering here of about $30,000,000 of securities. The offering consisted of about $20,000,000 of bonds and about $10,000,000 of preferred stock.

Proceeds of the offerings will be used to finance the purchase by Utilities Power of the Merchants' Heat and Light Company of Indianapolis from Insull and the purchase of a minority interest in the Indianapolis Light and Heat Company held until recently by Insull. Acquisition of the two Indianapolis utilities gives the Utilities Power interests practically a monopoly in the city.

Penna. Gas Association Arranges Program

Mid-Year Meeting to be Held at Norristown

Harrisburg, Pa.—The following is the program of the mid-year meeting of the Pennsylvania Gas Association:

9:30 to 10:00 A. M.—Registration.

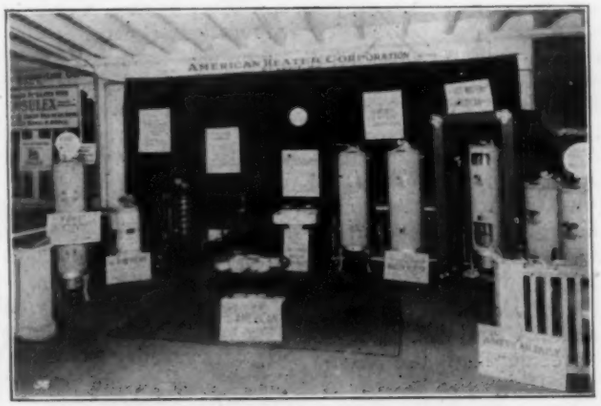
10:00 A. M.—Opening remarks by president of the Pennsylvania Gas Association, A. C. Taylor, Reading, Pa.; Address of welcome, Mayor of Norristown; Response, H. H. Ganser, Norristown, Pa.; Election and introduction of new members; Reports of various committees; Budgetary control, speaker to be named; Operating, equipping and maintaining automobiles, speakers to be named.

1:00 P. M.—Luncheon, speakers to be named. Afternoon session to be entirely taken up by round table discussion, including service to customers from the time request is received to turn on of gas and the installation and use of the appliances.

* * *

Syracuse Lighting Co. to Increase Capitalization

Albany, N. Y.—The Syracuse Lighting Co., Inc., Syracuse, has filed a certificate in the office of the secretary of state increasing its capital stock issue from 205,000 shares of $100 par value to 1,100,000 shares consisting of 100,000 shares preferred stock $100 par value and 1,000,000 shares common stock non par value.



The American Heater Corporation Exhibited A Fine Display at Atlantic City

Journals Wanted

The school of Engineering of the Johns Hopkins University, Baltimore, Md., through Wilbert J. Huff, professor of gas engineering, has asked for help to fill out sets of the following journals, and our readers are requested to communicate with Professor Huff in case they have these issues and wish to render them available to him. The journals are as follows:

Proceedings of the American Gas Institute, Vol. 10, 1915.

Proceedings of the Technical Section of the American Gas Association, Vol. 2, 1920.

Proceedings of the Manufacturers Section of the American Gas Association, Vols. 1 and 2.

* * *

West Va. Oil & Natural Gas Assn. Holds Meeting

Parkersburg, W. Va.—J. J. Evans, of Clarksburg, was elected president of the West Virginia Oil and Natural Gas Association. Other officers elected were: John P. Flynn, Sistersville, vice-president; Edwin Robinson, Fairmont, secretary-treasurer; and James H. Dye, Charleston; George A. Hatzel, Weston; W. H. Smith, Morgantown; Henry B. Davenport, Charleston; J. B. Wallace, Wheeling; and Wallace B. Gribble, Clarksburg, directors.

PAINE, WEBBER & CO. BUYS GAS COMPANIES

South Portland and Westbrook Branches to be Joined With Portland Company

Portland, Ore.—Paine, Webber & Co. has announced the acquisition of the two companies supplying service to the cities of South Portland and Westbrook. These two will be joined with the Portland Gas Light Co., already controlled by Paine, Webber & Co., into a unit to be known as the Maine Gas Companies.

Purchase was made from the Payson interest, who have controlled the South Portland and Westbrook companies for many years. No change in policy or operation is contemplated by the new owners, it is understood.

Paine, Webber & Co., it will be recalled, obtained a majority of the stock of the Portland Gas Light Co. from the City of Portland, the largest owner, when the City Council offered this stock to the highest bidder in order to devote its equity in the company to means better suited for the city's financial interests. Price paid was $84.50 a share, the same offer having been extended to all other holders of the common stock. In this manner, Paine, Webber & Co. obtained nearly all the common stock in the Portland Gas Co., it is understood.

Brooklyn Union Honors Veterans

Year's Pay and Resolutions, Given Eleven Men With Service Records Aggregating 577 Years

Eleven veterans of The Brooklyn Union Gas Company were presented with a year's pay, on the stage of the Knights of Columbus clubhouse, Prospect Park Plaza, Brooklyn, on the evening of October 21. Accompanying the pay was an engrossed resolution from the board of directors of the company, thanking the men for their fifty years of service to the organization.

The presentation of the year's pay was made by Arthur F. Staniford, vice-president of the company, representing the board of directors. Mr. Staniford, who is himself a forty-five year veteran of the service, was very much affected by the opportunity of presenting to his old associates, the gift and resolution from the company. The men who received the year's pay and their years of service are: Frank J. McIntyre, 61 years; Edward J. Byrne, 54 years; Edward R. DuCret, 53 years; James Clarke, 52 years; Bartholomew Kotchie, 52 years; Patrick McIntyre, 52 years; Thomas Roach, 52 years; Michael Shay, 51 years; Warren S. Archer, 50 years; John Etherson, 50 years; Henry Sporing, 50 years.

Previous to the presentation of the gift and resolution, all of the honor men were presented with emblems for service of twenty-five years or more, by Borough President James P. Byrne.

Before the presentation of the emblems, a dinner was served in the council room of the clubhouse, which was attended by all of the honor men and the executives of the gas company. Mr. Staniford also presided at this dinner. He made a reminiscent address in which he spoke about employing a great many of the men who have served twenty-five years or more in the service of the company.

After the dinner the entire party went to the grand ballroom of the clubhouse, where Clifford E. Paige, vice-president, acted as chairman of the ceremonies. Mr. Paige made a short address in which he said:

"In this profound appreciation, let us not lose sight of the fact that success comes only as a result of effort. We must be very watchful—very careful to retain the friendship of our customers, and through them, the good-will of the general public.

"Did you ever stop to think that in every conversation you have with anybody, or on any subject, you are directly or indirectly reflecting the attitude and policy of this company?

"Good-will is the vital asset of public utility operation. Man power and money alone cannot secure success.

"The public is fair when it knows the facts. It is our purpose that they shall know the facts. In frank and fearless statement of the company policy, we find adequate defense against the demagogue who seeks to arouse public enmity, always for his individual and entirely selfish ends."

At the conclusion of his talk, Mr. Paige introduced Borough President Byrne, who presented the service emblems to the men and made a short talk.

Arthur S. Somers, president of the Long Island Chamber of Commerce, was then introduced. He made an address in which he complimented the men on their faithful service to the company and community and also spoke highly of the action of the company in rewarding their faithful employees.

Dr. Humphreys Resigns as President of Stevens

Head of Technical Institute for Nearly 25 Years Will Be Board Chairman

New York City.—Dr. Alexander Humphreys, for almost twenty-five years president of the Stevens Institute of Technology at Hoboken, has resigned.

Well Known in Gas Industry

Dr. Humphreys was for many years a prominent figure in the gas industry prior to the year 1922, at which time he retired from business and devoted himself entirely to the affairs of Stevens Institute of Technology. For twenty years he carried on his business as consulting engineer as well as his duties as president of the college.

Dr. Humphreys' first connection with the gas business was in 1872 when the directors of the gas company supplying the Bergen Point, New Jersey, district induced him to become secretary, and shortly afterwards also superintendent of the Bayonne and Greenville Gas Light Company.

Shortly after his graduation from Stevens Dr. Humphreys became chief engineer of the Pintsch Lighting Company of New York. In this position, which he held for over three years, he built many oil gas works, acquired great experience in the manufacture and utilization of gases of high illuminating power, and ascertained the gas making values of all kinds of oil, especially with reference to the compression and storage of gas for lighting of railway trains, ferry boats, light-buoys, etc.

In 1885 Dr. Humphreys was appointed superintendent of construction for the United Gas Improvement Company, and shortly afterward its general superintendent with headquarters in Philadelphia.

Connection With U. G. I. Co.

During Dr. Humphreys' decade with the United Gas Improvement Company the increase in his responsibilities more than kept pace with the marvelous growth of the company. He was first constructing engineer, next general superintendent, then he annexed the contracting department, then the purchasing agent's department, and finally the commercial management of all of the company's works. In addition he was acting general manager of the Welsbach Incandescent Gas Company while its independent organization was being effected. During this time the gas works comprised in the company's system increased from ten to nearly fifty.

In May, 1892, the firm of Humphreys & Glasgow of London was established, and in August, 1894, Dr. Humphreys retired from his official connection with the United Gas Improvement Company in order to establish the firm of Humphreys & Glasgow of New York.

Dr. Humphreys was especially responsible for the development of the "Lowe" water gas apparatus into its present form, known as the "double superheater," and the London firm of Humphreys & Glasgow was the first to introduce this type of water gas apparatus into foreign countries. The New York firm confined its business to the management of lighting properties and to consulting, Dr. Humphreys' professional advice being of special value to bankers in connection with schemes of reorganization and consolidation.

In 1898 Dr. Humphreys was elected president of the Buffalo (N. Y.) Gas Company, a connection which he retained for many years.

In 1902 Dr. Humphreys was elected president of Stevens Institute of Technology by a unanimous vote of the board of trustees.

Dr. Humphreys was president of the American Gas Light Association for the year 1898-1899; president of the American Gas Institute for the year 1907-1908, and is now president of the Society of Gas Lighting of New York. He is a member of the American Gas Association and of all the prominent engineering societies, and has contributed many valuable papers to technical literature.

East Bronx Gas Company Wins Right to Keep Current Rate

New York City.—Through a motion granted by the Supreme Court in Washington, the Bronx Gas and Electric Co. won the right to continue its gas rate of $1.45 per 1,000 cubic feet which has been charged since July, 1925.

This gas company supplies only that territory in the Bronx known as the Westchester section.

This action came during a hearing of the Supreme Court on three suits, filed by the State of New York, against the Consolidated Gas Co., of which the Bronx Gas and Electric Co. is a part, the Brooklyn Union Gas Co. and the Kings County Lighting Co.

Higher Rate for Bronx Concern

A higher rate has been conceded to the Bronx company all along, vice-president Thomas explained, because the Public Service Commission realized that it faced problems of cost and distribution that did not confront gas companies in other boroughs.

* * *

BUREAU OF STANDARDS ANNIVERSARY

Twenty-five Years of Successful Scientific Research Work to be Celebrated

Washington, D. C.—A celebration of the twenty-fifth anniversary of the Bureau of Standards of the Department of Commerce is just announced. On Saturday, December 4, next, the Bureau will keep Open House and a banquet will be given at which the many friends of the Bureau will meet the staff and reminiscences will be exchanged, the achievements of the quarter century will be reviewed, and the present and future work will be discussed. A group of distinguished guests will attend. The event is of interest to the world of science and as well to the industrial experts who have worked so closely in co-operation with the Bureau and in turn made application of its discoveries and developments in perfecting the measured control of processes. The opportunity to inspect the experimental research facilities of the Bureau will be welcomed by its many friends.

Gas Use Shows a Gain in Jacksonville

Jacksonville, Fla.—The Jacksonville Gas Company recently announced an increase of 30 per cent in the use of gas during the last twelve months over the previous year. This growth reflects directly the substantial development of the community and its industries, so apparent in our city, it is pointed out.

Engineers of this utility company state that the construction and extension work required of their company in order to keep pace with the growth of Jacksonville is about equal to the construction requirements for a city of at least four hundred thousand.

The progress of the company during the past two years has been interesting. Due to the building activity and the increased population of the city, the common stock holders were obliged to advance the sum of $600,000 in order to meet requirements of the company. For this advance the common stockholders have accepted second preferred stock, having the par value of the amount of the advance. In doing so, they have accepted a stock junior both as to assets and dividends to the 7 per cent first preferred stock, which is now being offered by the company to its customers and the general public.

Roy A. Zeigler, vice-president of the Jacksonville Gas Company, said the company wishes to acknowledge with satisfaction the fine response of its customers and the public to the customer ownership plan. There are now several hundred stockholders receiving regular quarterly checks on the stock of the company which they hold.

* * *

Two Utilities Plants Sold By Big Syndicates

Oklahoma City, Okla.—The Oklahoma Northern Utilities Co., with state headquarters at Ponca City, announces the purchase of the Garber Gas and Fuel Co., of Garber, and of the Hoy Oil and Gas Co., of Medford. The consideration was not made public. The new owners will assume control immediately. The company owns and operates gas distribution systems at Blackwell, Tonkawa, Hominy and Cushing, in addition to the recent purchases.

General Gas Co. to Merge 2 Utilities

Newton Gas and Washington Gas Co. to be Consolidated Into New Jersey Power

The General Gas and Electric Corp. will merge the Newton Gas Co. and the Washington Gas Co. into the New Jersey Power and Light Co.

In this connection a special meeting of the stockholders of the New Jersey Power and Light Co. has been called for November 4 to approve this plan and also an increase in stock capitalization from $1,000,000 common and $1,000,000 7 per cent preferred, both of $100 par value to 150,000 shares of no par common and 100,000 shares of no par cumulative preferred.

Stockholders of the present New Jersey Power and Light 7 per cent preferred will be given the choice of taking for each share of their stock one share of new $6 preferred redeemable at $110 in cash and accrued dividends to date of payment. The General Gas and Electric Co. owns all the present New Jersey Power and Light Co. common stock.

Contracts Awarded

The Gas Machinery Co., of Cleveland, O., has received a contract from the Arlington Gas Light Co., of Arlington, Mass., for one eleven-foot carburetted water gas apparatus.

The apparatus is to be complete with overhead brick operating floor, exhaust steam valves and piping, air and steam meters, pyrometer, explosion check valve, automatic control and special reverse steam arrrangement devised by W. M. Russell, chief engineer of the gas company.

The water gas equipment will be placed in a new building adjoining the present water gas generator house and auxiliary new equipment necessary to provide for the proper operation of the eleven-foot set will also be installed.

Among recent contracts secured by The Western Gas Construction Co. is one for a liquid purification plant with a capacity of 2,500,000 cubic feet of gas per day for the Texas Oil Co., of Port Arthur, Texas.

Contract has been secured by The Western Gas Construction Co. for a liquid purification plant having a capacity of 6,000,000 cubic feet of gas per day, to be erected at Wood River, Illinois, for the Illinois and Missouri Pipe Line Co. This contract includes the furnishing and erecting of the buildings as well as the equipment.

Contract has been awarded the Western Gas Construction Co. for two Benzol washers for erection at the plant of the Milwaukee Gas Light Co., Milwaukee, Wis.

So. Counties Gas Co. to Serve

Santa Ana, Cal.—The Southern Counties Gas Co. has announced that it will introduce natural gas into Laguna Beach, a town of about 1,500, 22 miles from here, at an early date. Laguna Beach is noted as an artists' colony and as one of the beauty spots in Southern California and it is growing rapidly. This announcement of the company's intention of entering the Laguna Beach territory followed the requests of many residents and business men of that community.

Two Part Rate

The company plans to file immediately with the California Railroad Commission a two-part rate schedule. This is the form of schedule favored by the majority of prospective Laguna Beach consumers and, according to Engineer Bridge, is the most equitable to all classes of consumers.

"A preliminary survey," says Engineer Bridge, "indicates that there are approximately 950 houses in Laguna Beach which could be served by a distribution system covering the built-up section of that community. Based on the experience of other public utilities, we find that if the entire 950 would become gas consumers, only 700 would use gas throughout the winter and the number of active meters would be approximately 775.

"The estimated cost of the above improvements, together with other necessary equipment to operate the system, will be at least $130,000.

" 'Consumer's charge, $1.25 per meter per month; commodity rate, 90 cents per standard 1,000 cubic feet.'

"It is proposed that rates for industrial service shall be identical with those prevailing in the remainder of our Orange County territory."